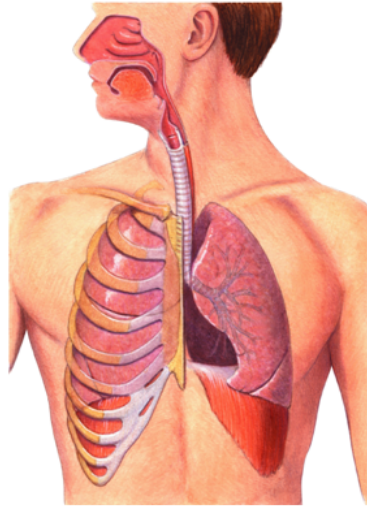


37-3 The Respiratory System



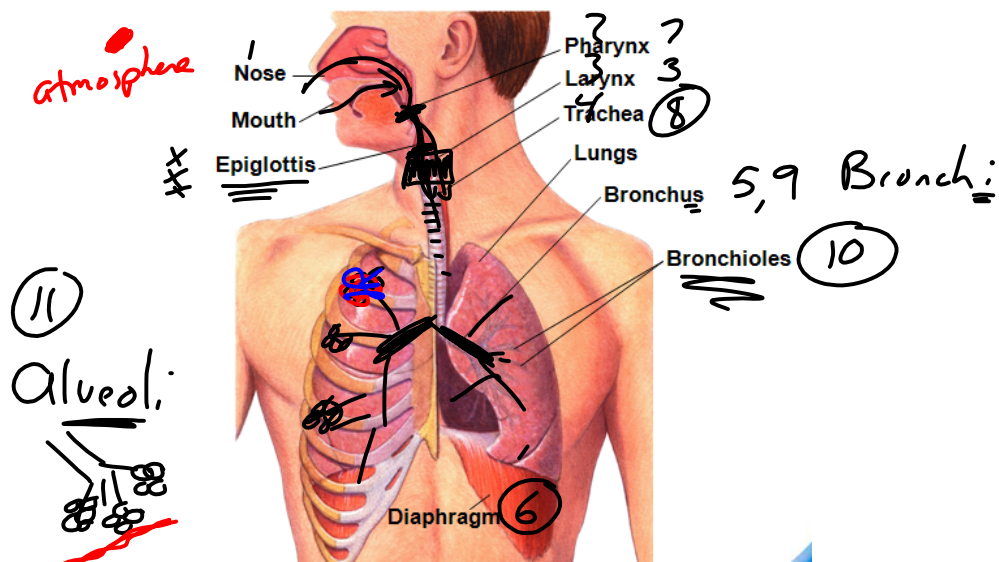
What Is Respiration?

In biology, *respiration* means two different things.

Cellular respiration is the release of energy from the breakdown of food in the presence of oxygen.

At the organism level, respiration is the process of gas exchange—the release of carbon dioxide and the uptake of oxygen between the lungs and the environment.

The basic function of the human respiratory system is the exchange of oxygen and carbon dioxide between the blood, the air, and tissues.



Lesson 8 Respiratory System Parts.notebook

- 1) Air enters the nose or mouth and moves to the pharynx, or throat. (nose = air filter)

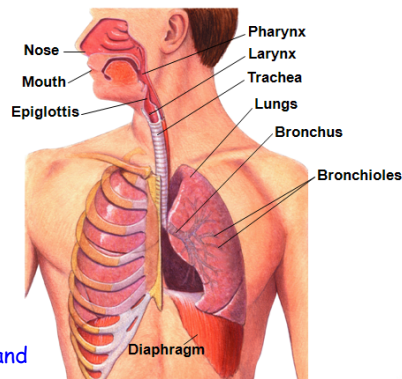
3a) larynx - at the beginning of the trachea
= voice box

- 2) The **pharynx** serves as a passageway for both air and food.

- 3) Air moves from the pharynx into the **trachea, or windpipe.**

The epiglottis covers the entrance to the trachea when you swallow.

* Trachea has rings of cartilage to hold it open and is lined with cilia



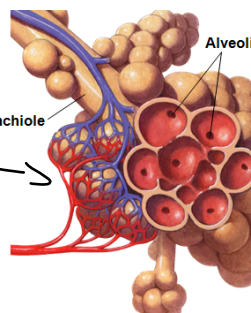
- 4) Air then passes through the trachea into two large passageways in the chest cavity called **bronchi.**

Each bronchus leads into one of the lungs.

- 5) In each lung, the bronchus subdivides into smaller bronchi, and then into **bronchioles.**

- 6) Bronchioles subdivide into millions of tiny air sacs called **alveoli.**

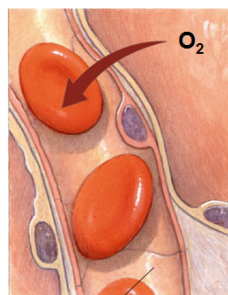
Capillaries



Gas Exchange

Gas exchange takes place in the alveoli.

Oxygen diffuses into the blood. - attach to hemoglobin on a red blood cell



Carbon dioxide in the blood diffuses into the alveolus.

→ doesn't attach to hemoglobin
→ CO₂ is what controls your breathing rate

